BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.

Amendments to the Drawings:

The attached sheets of drawings include changes to Figures 1-3. These sheets, which include Figures 1-3, replace the original sheets including Figures 1-3. Figures 1-3 have been enlarged and made more legible.

Attachment: Replacement Sheets
Annotated Sheet Showing Changes

REMARKS/ARGUMENTS

Reconsideration and continued examination of the above-identified application are respectfully requested.

The applicants and the undersigned appreciate the telephone conversation with Examiner Choi on December 3, 2003. In the telephone interview, the rejections set forth in the final Office Action and the Advisory Action, and the differences between the claims of the present application compared to the cited art relied upon by the Examiner were discussed. The substance of the telephone interview is set forth in the remarks below.

In the amended Figures 1-3, per the Examiner's request during the telephone interview and as set forth in the Advisory Action, the drawings have been made more legible. The amendment to the claims further defines what the applicants regard as the invention and/or are editorial in nature. Full support for the amendment exists in the specification as originally filed. No new questions of patentability should arise nor does the amendment necessitate any further searching on the part of the Examiner. The amendment places the application in condition for allowance. At a minimum, the amendment places the application in a better condition for appeal. Accordingly, no questions of new matter should arise and entry of the amendment is respectfully requested.

Claims 1-4; 7-16, and 18-30 are pending in the application. Claims 5, 6, and 17 have been canceled.

At page 2 of the Office Action, the Examiner rejects claim 28 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicants regard as the invention. According to the Examiner, one skilled in the

art would be unable to determine how a given complex exhibits structural spectra as shown in Figs. 1, 2, 3, or combinations thereof, or how the figures can be combined.

The Examiner also reversed his earlier position, which required the applicants to set forth the figures in the claim itself. According to the Examiner, the applicants may simply reference the figures in the claims.

The Examiner asserts that the figures as originally filed are too small to discern the testing parameters and numbers. The Examiner also asserts that one skilled in the art would not be able to determine, from the figures and disclosure set forth in the specification, whether a given silver glutamic chelate falls within the scope of the claims, or how the figures may be combined.

Additionally, the Examiner asserts that since the spectra are for an identical compound but involve different analysis techniques, the figures cannot be combined in part or in whole. Furthermore, the Examiner believes that the spectra exhibit an identical compound; thus, the compound necessarily exhibits all of the spectra depicted in Figures 1, 2, and 3. Therefore, the Examiner suggests that the limitation of claim 28 should be "Figures 1, 2, and 3" as opposed to "Figures 1, 2, or 3, or combinations thereof." For the following reasons, this rejection is respectfully traversed.

The figure numbers recited in claim 28 of the present application relate to Differential Scanning Calorimetry (DSC) spectrum, proton Nuclear Magnetic Resonance (NMR) spectrum, and carbon NMR spectrum. Each of these tests is a different analysis. The carbon and hydrogen NMRs are distinct because they provide different information about the structure of the same composition. In addition, the DSC is independent of both NMRs because it also provides different information

about the structure of the same composition. Page 15 of the present application clearly describes the DSC and NMR analyses, which correspond to Figs. 1-3 of the present application. From page 15 of the present application, it is clear that Figs. 1-3 individually and/or collectively are the fingerprints of the product. Any one of these spectra can be used to describe the material. Given that carbon NMR, hydrogen NMR, and DSC provide different information regarding the structure of a composition, one skilled in the art, by evaluating each of the spectra, individually or collectively, can identify the structure of the composition. Just as there are numerous U.S. patents issued which describe the same material by use of a number of alternative characteristics (e.g., BET, pH, or density), claim 28 is doing the same.

Additionally, per the Examiner's request, the applicants have made Figs. 1, 2, and 3 more legible to better assist the Examiner. Accordingly, the rejection under 35 U.S.C. §112, second paragraph, should be withdrawn.

At page 3 of the Office Action, the Examiner rejects claims 1-4, 7-16, and 18-30 under 35 U.S.C. §112, second paragraph, for failing to set forth the subject matter which the applicants regard as the invention. According to the Examiner, in the previous response to the Office Action, the applicants stated that the product of the claimed invention is in a solid state and that in an experiment when glutamic acid was added to a solution, a yellowish precipitate was formed. The Examiner states that the arguments set forth by the applicants, in the previous response to the Office Action, indicate that the invention differs from what is recited in the claims because the claims do not require the product to be in a solid form, and in fact, the claims recite an aqueous solution. For the following reasons, this rejection is respectfully traversed.

It is important for the Examiner to appreciate that it is an inherent property of the composition and method recited in claims 1, 9, 13, 16, 21, 23, and 26 to form a complex that is a solid when present in an aqueous solution. As discussed in more detail below, the claimed invention also includes a disinfectant and/or the composition of the claimed invention is prepared at a pH of about 2.0 or less which are not taught or suggested by the cited references. Furthermore, claim 28 illustrates a DSC spectrum, which is used for solids and not liquids. Accordingly, the rejection under 35 U.S.C. §112, second paragraph, should be withdrawn.

At page 4 of the Office Action, the Examiner rejects claims 1-4, 8, 11, 13, 16, 18, 21, and 22 under 35 U.S.C. §102(b) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Poddymov et al. or Sanchez et al. for the reasons set forth in the prior Office Action.

Additionally, the Examiner asserts that Poddymov et al. and Sanchez et al. each teach a method of chelating silver with amino acids in acidic conditions at room temperature. Alternatively, the Examiner asserts that the claimed invention is rendered obvious within the meaning of 35 U.S.C. §103(a), because the cited art describes products and uses that contain the same exact ingredients/components as that of the claimed invention.

Furthermore, in response to the applicants' argument submitted on April 14, 2003 that neither Poddymov et al. nor Sanchez et al. teach or suggest the use of the complexes as bactericides, the Examiner asserts that recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. According to the Examiner, if the prior art

structure is capable of performing the intended use of the claimed invention, then the prior art anticipates the claimed invention. Thus, according to the Examiner, the intended use of a claim drawn to a process of making a product must result in a manipulative difference when compared to the prior art. The Examiner also asserts that no requirement exists that a reference provide structural spectra. With respect to the applicants' argument that pages 14 and 15 of the present application state that the product of the claimed invention is in a solid state, the Examiner asserts that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. Further, the Examiner states that claims 2, 10, 13-15, 20, 23-27, and 30 recite that the product is in an aqueous solution or imply that the product is a liquid or a semi-liquid. Also, the Examiner asserts that Poddymov et al. describes that complexes are formed at a pH of less than 3. Finally, the Examiner asserts that the applicants provide no evidence that a pH of about 2 excludes a pH of 3 or less. The Examiner also states that the applicants in the Amendment After Final argued that glycine and aspartic acid only form complexes in basic solutions at a pH of greater than 6.5 and that the concept holds true for methionine. Thus, the Examiner states that the claims of the present application cannot be enabled for glycine, aspartic acid, or methionine.

The Examiner also states that the limitation "disinfectant" is not defined in the claim and the applicants have not shown that the prior art composition does not contain a disinfectant. For the following reasons, this rejection is respectfully traversed.

Claims 1 and 21 of the present application recite, in part, a microbicidal composition comprising a disinfectant in addition to a complex of the formula R-M, wherein the disinfectant

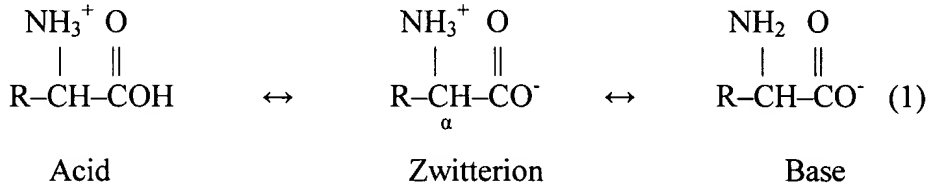
differs from the complex of the formula R-M. Similarly, claim 16 of the present application recites, in part, a microbicidal composition comprising at least one disinfectant in addition to a product obtained by combining at least one metal ion (M) with at least an equimolar amount of at least one organic chelating moiety (R) based on the amount of M, wherein the disinfectant differs from the product obtained by combining the metal ion with at least one organic chelating moiety. Claim 13 of the present application recites, in part, a method to prepare a micrbicidal composition comprising a complex of the formula R-M, wherein the preparation of the composition occurs at a pH of about 2.0 or less.

Poddymov et al. relates to the reaction of Ag with gelatin to form amino acids by hydrolysis to determine the factors affecting photographic properties of light-sensitive materials based on gelatin and silver halides. Thus, Poddymov et al. does not relate to antimicrobial agents and one skilled in the art would not look to Poddymov et al. under 35 U.S.C. §103. Additionally, Poddymov et al. specifically states that a complex formulation can be observed in glycine and aspartic acid solutions at a pH of greater than 6.5. Also, no "at least one disinfectant" is taught or suggested in combination with the complex.

With respect to the Examiner's comments that the applicants in the Amendment After Final argued that glycine and aspartic acid only form complexes in basic solutions at a pH of greater than 6.5 and that the concept holds true for methionine, the Examiner misunderstood the arguments presented by the applicants. It is important for the Examiner to understand that Poddymov et al., specifically states that a complex formulation can be observed in glycine and aspartic acid solutions at a pH of greater than 6.5. According to Poddymov et al., the complex formulation increases with

increasing the pH of the solution. Additionally, Poddymov et al. states that in the methionine solution, complexation decreases significantly below a pH of 3. Accordingly, in Poddymov et al., the complex formulation in methionine was measured at a pH of 4. In contrast, as recited in claims 1, 13, 16, and 21 of the present application, precipitation complexation occurs at a pH of 2 or less.

The behavior of the composition of Poddymov et al. can be explained as follows:



In the above formula, the amino acid exists as a zwitterion, that is, it acts as a base and as an acid. In an acidic solution, the α-carbon becomes protonated, which prevents any complexing to occur by preventing the OH group of the carboxylic acid to form a bond. Therefore, the glycine and aspartic acid of Poddymov et al. only form complexes in basic solutions at a pH greater than 6.5, where the carboxylic group acts as a Lewis-acid and can form a complex with a metal. Similarly, the concept described above also holds for methionine. Thus, it would be clear to one skilled in the art that, unlike in the claimed invention, complexation in Poddymov et al. occurs with the carboxylic acid group. With respect to Examiner's statement that Poddymov et al. teaches that complexes are formed at a pH of less than 3, Poddymov et al., at page 879, column 1, lines 1-6, states that for methionine, complexation decreases significantly below a pH of 3. A person skilled in the art, reading this point, would not go below a pH of 3. Accordingly, Poddymov et al. teaches away from the claimed invention.

In addition, with respect to the Examiner's argument that the recitation of the intended use of the claimed invention would not distinguish over the prior art, this is not entirely accurate with respect to several of the claims in the present application. Claims 1, 16, and 21 specifically recite the presence of at least one disinfectant, wherein the disinfectant is in addition to the complex of the formula R-M. Poddymov et al. simply does not teach or suggest a composition that also includes a disinfectant in addition to a complex of the formula R-M.

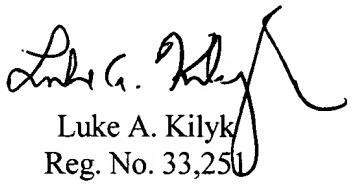
Further, Sanchez et al. relates to determining the thermodynamic stability constants of Ag with phenylalanine, alanine, and serine. The protons of Sanchez et al. are liberated when a metal ion replaces hydrogen ions in the ligand. However, if very stable complexes are formed, the replacement of protons will be complete so that pH measurements cannot yield accurate values of stability constants. Thus, the complexes in Sanchez et al. differ from the claimed invention because the proton in Sanchez et al. is replaced by a metal. Furthermore, no suggestion exists in Sanchez et al. for its complexes to be used as bactericides or pesticides for plants, flowers, or biofouling. Sanchez et al. also does not teach or suggest at least one disinfectant, which is in addition to the complex of the formula R-M as recited, for instance, in claims 1, 16, and 21 of the present application. Thus, Poddymov et al. and/or Sanchez et al. do not teach or suggest the claimed invention. Accordingly, the rejection under 35 U.S.C. §102(b) or, alternatively, under 35 U.S.C. §103(a) over Poddymov et al. and/or Sanchez et al. should be withdrawn.

CONCLUSION

In view of the foregoing remarks, the applicants respectfully request the reconsideration of this application and the timely allowance of the pending claims.

If there are any other fees due in connection with the filing of this response, please charge the fees to Deposit Account No. 50-0925. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such extension is requested and should also be charged to said Deposit Account.

Respectfully submitted,



Luke A. Kilyk
Reg. No. 33,251

Atty. Docket No. 3731-002
KILYK & BOWERSOX, P.L.L.C.
53 A East Lee Street
Warrenton, VA 20186
Tel.: (540) 428-1701
Fax: (540) 428-1720

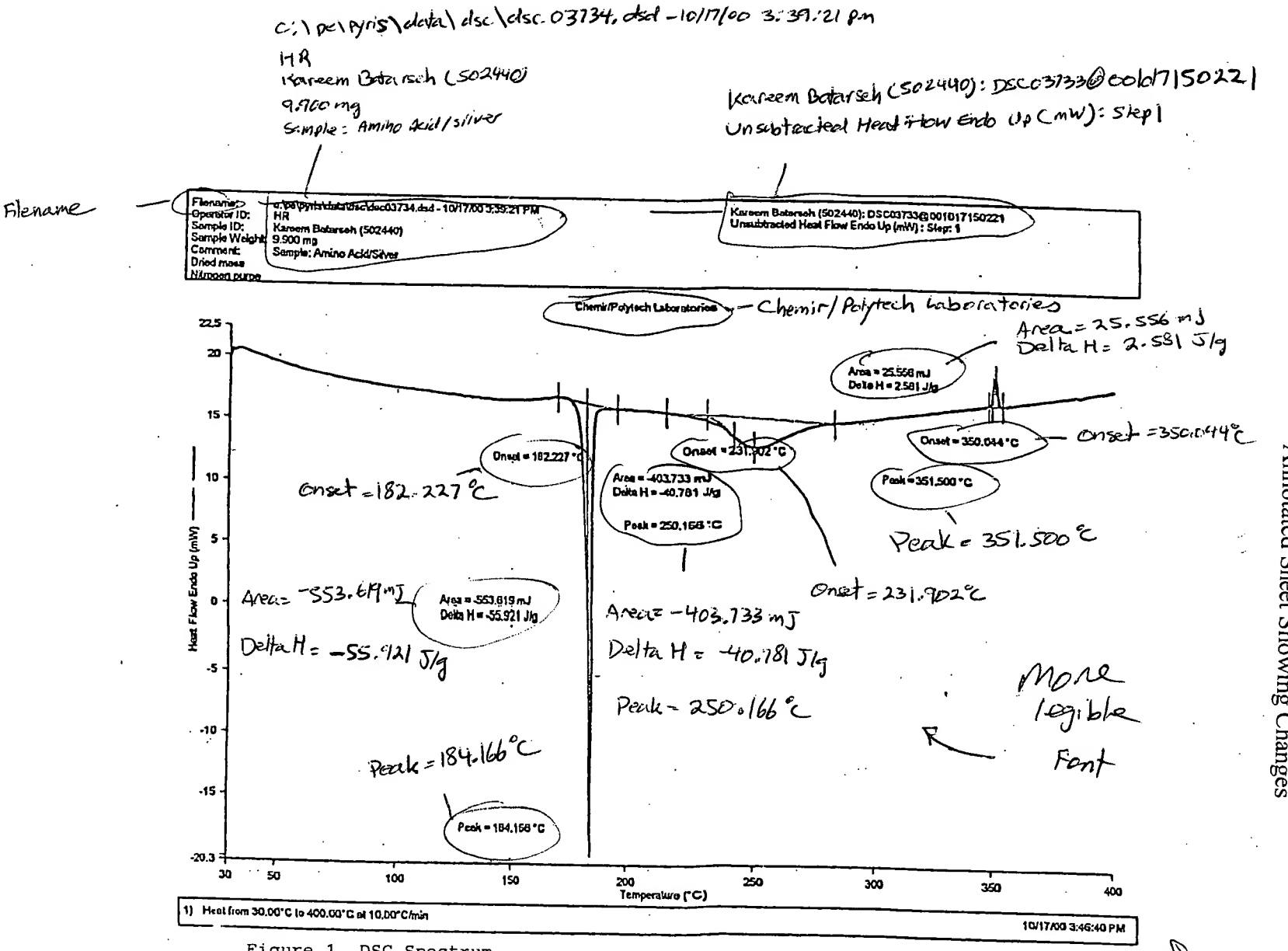


Figure 1. DSC Spectrum

Enlarged Figure

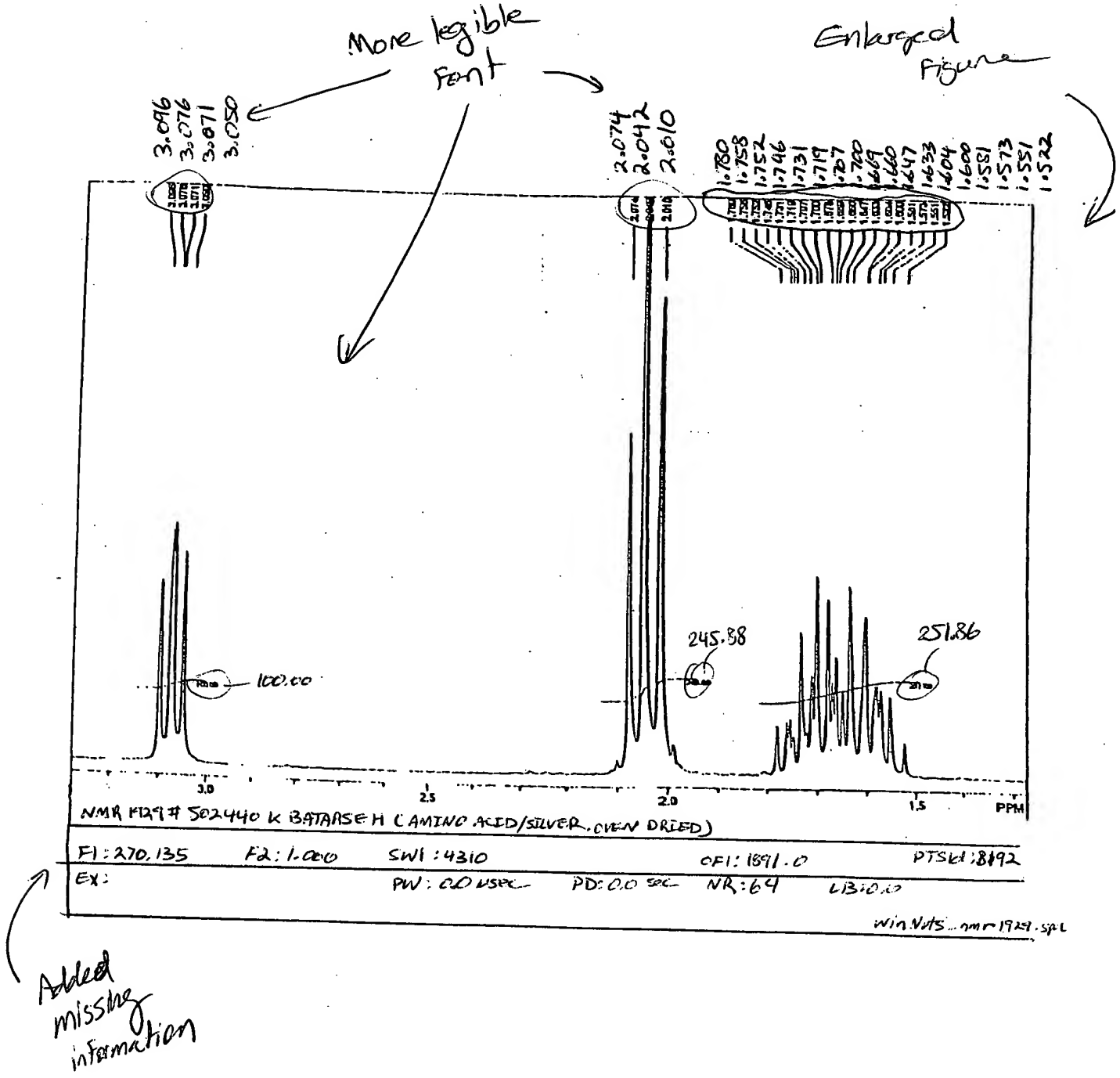
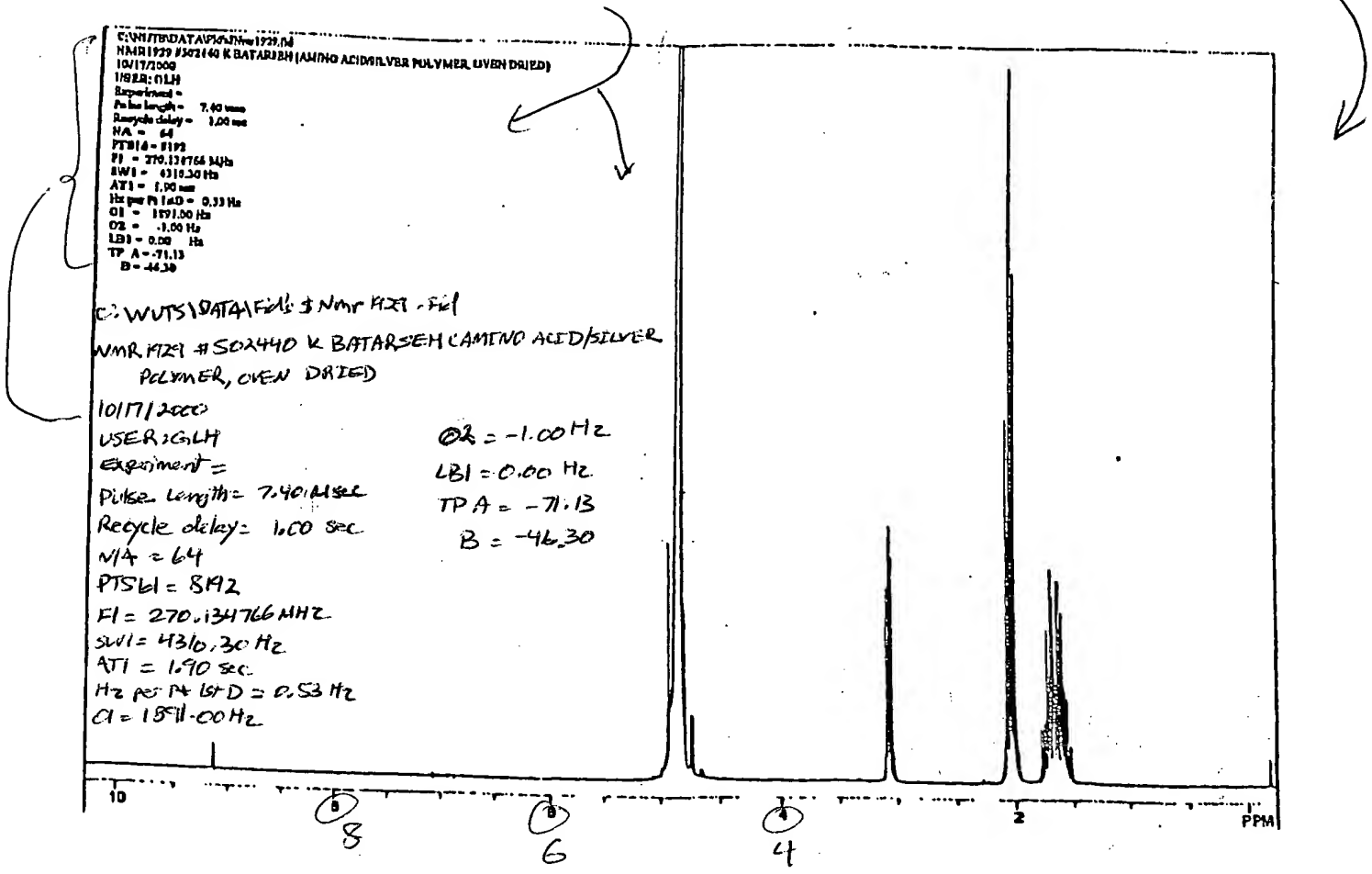


Figure 2. Proton NMR Spectrum – Cont.

More legible font

Enlarged Figure



NMR M29 #502440 K BATARSEH (AMINO ACID/SILVER POLYMER, OVEN DRIED) USER:GLH-DATE 10/17/2000

F1: 270.135	SW1: 4310		O1: 1891.0		PTS61: 8192
EX	PW: 7.4 usec	PD: 1.0 sec	NA: 64	LB: 0.0	winNMR- Fid$Nmr\M29\.Fid

Added missing information

Figure 2. Proton NMR Spectrum

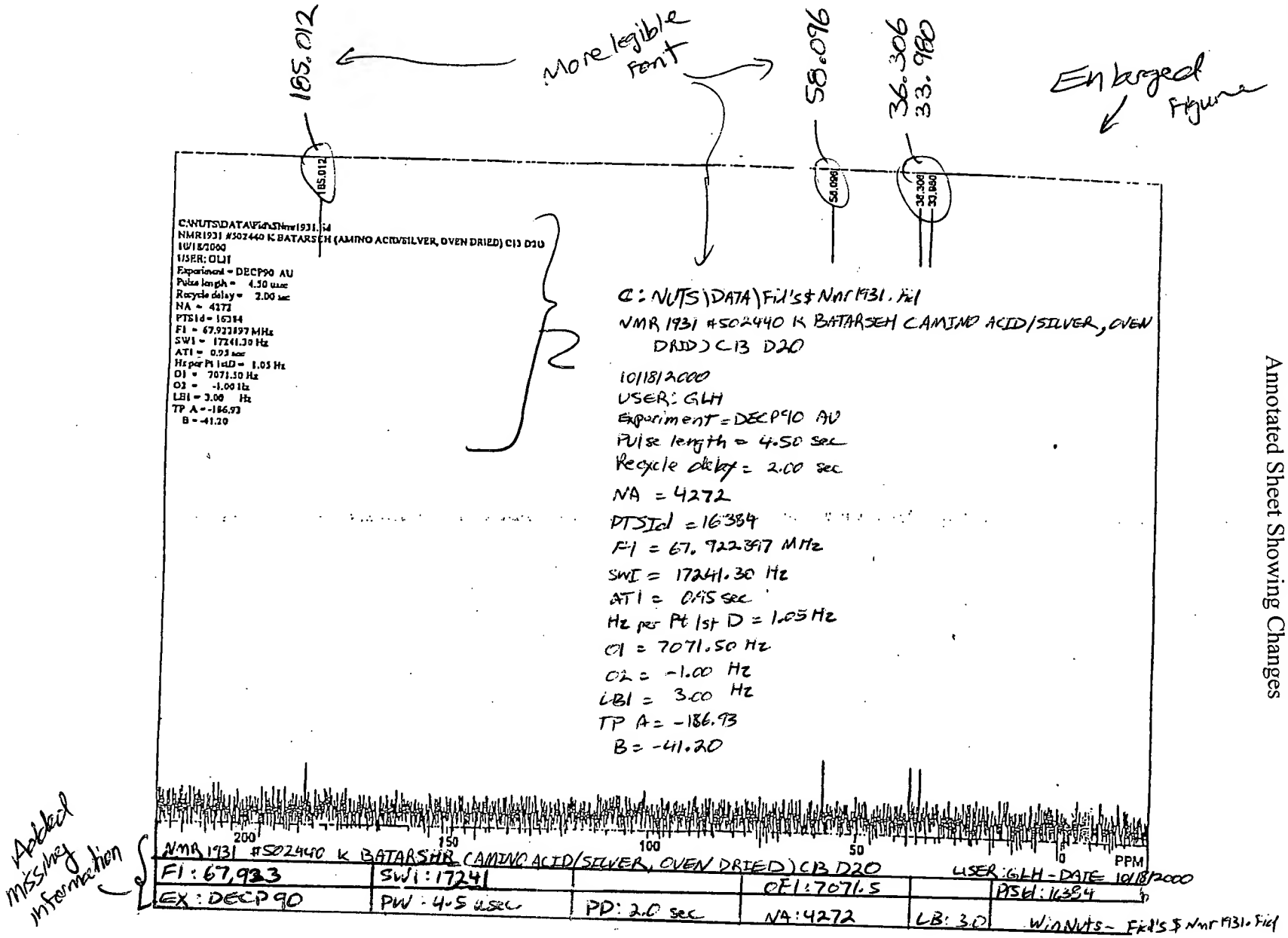


Figure 3. Carbon NMR Spectrum